

**WHAT IS CLAIMED IS:**

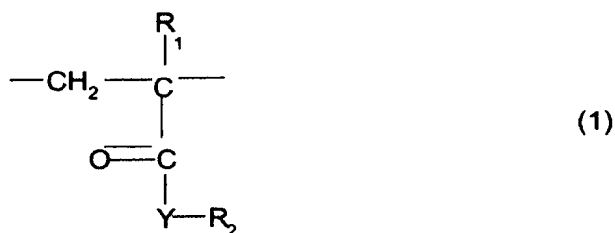
1. A photoprotective composition comprising at least one aqueous phase and at least one system for screening out UV-radiation, further comprising:
  - (a) at least one partially or totally neutralized, crosslinked or non-crosslinked amphiphilic polymer of 2-acrylamidomethylpropanesulfonic acid (AMPS), and
  - (b) at least one water-soluble silicone comprising at least one terminal or pendent monovalent polyoxyalkylene group.
2. The photoprotective composition as defined by Claim 1, said at least one AMPS polymer being partially or totally neutralized with a mineral or organic base.
3. The photoprotective composition as defined by Claim 2, such neutralization being with sodium hydroxide, potassium hydroxide or aqueous ammonia.
4. The photoprotective composition as defined by Claim 2, such neutralization being with monoethanolamine, diethanolamine, triethanolamine, aminomethylpropanediol, n-methylglucamine, basic amino acids, and mixtures thereof.
5. The photoprotective composition as defined by Claim 1, said at least one AMPS polymer being at least 90% neutralized.
6. The photoprotective composition as defined by Claim 1, said at least one AMPS polymer being crosslinked with polyolefinically unsaturated compounds.

7. The photoprotective composition as defined by Claim 6, the crosslinking agent being selected from among divinylbenzene, diallyl ether, dipropylene glycol diallyl ether, polyglycol diallyl ethers, triethylene glycol divinyl ether, hydroquinone diallyl ether, ethylene glycol di(meth)acrylate or tetraethylene glycol di(meth)acrylate, trimethylolpropane triacrylate, methylenebisacrylamide, methylenebismethacrylamide, triallylamine, triallyl cyanurate, diallyl maleate, tetraallylethylenediamine, tetraallyloxyethane, trimethylolpropane diallyl ether, allyl (meth)acrylate, allylic ethers of alcohols of the sugar series, or other allyl or vinyl ethers of polyfunctional alcohols, and also allylic esters of phosphoric and/or vinylphosphonic acid derivatives, or mixtures thereof.
8. The photoprotective composition as defined by Claim 5, the crosslinking agent being selected from among methylenebisacrylamide, allyl methacrylate and trimethylolpropane triacrylate (TMPTA).
9. The photoprotective composition as defined by Claim 6, the degree of crosslinking ranging from 0.01 mol% to 10 mol% relative to the polymer.
10. The photoprotective composition as defined by Claim 1, said at least one amphiphilic AMPS polymer comprising at least one fatty chain containing from 7 to 30 carbon atoms.
11. The photoprotective composition as defined by Claim 1, said at least one amphiphilic AMPS polymer having a weight-average molecular weight ranging from 50,000 to 10,000,000.

12. The photoprotective composition as defined by Claim 1, said at least one amphiphilic AMPS polymer comprising a random amphiphilic polymer of AMPS modified by reaction with a C<sub>6</sub>-C<sub>22</sub> n-monoalkylamine or di-n-alkylamine, optionally comprising the polymerizate of one or more ethylenically unsaturated hydrophilic monomers.

13. The photoprotective composition as defined by Claim 1, said at least one amphiphilic AMPS polymer comprising a polymer of AMPS and of at least one ethylenically unsaturated monomer which comprises at least one hydrophobic moiety containing from 7 to 30 carbon atoms, and optionally one or more ethylenically unsaturated hydrophilic comonomers.

14. The photoprotective composition as defined by Claim 13, in which the ethylenically unsaturated monomers comprising at least one hydrophobic moiety containing from 7 to 30 carbon atoms are selected from among the acrylates or acrylamides of formula (1) below:



in which R<sub>1</sub> is a hydrogen atom or a linear or branched C<sub>1</sub>-C<sub>6</sub> alkyl radical; Y is O or NH; and R<sub>2</sub> is a hydrophobic radical comprising a fatty chain containing from 7 to 22 carbon atoms.

15. The photoprotective composition as defined by Claim 14, in which the hydrophobic radical R<sub>2</sub> is selected from among linear or branched, saturated or

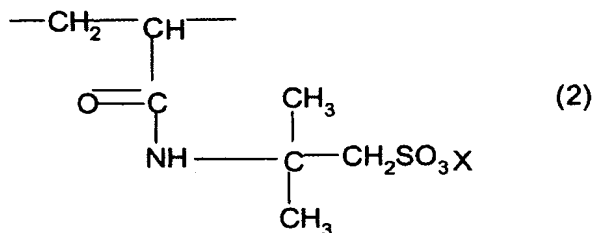
unsaturated C<sub>7</sub>-C<sub>18</sub> alkyl radicals, C<sub>7</sub>-C<sub>18</sub> alkylperfluoro radicals, the cholesteryl radical or a cholesterol ester, and aromatic polycyclic groups.

16. The photoprotective composition as defined by Claim 14, in which the hydrophobic radical R<sub>2</sub> also comprises at least one alkylene oxide structural unit.

17. The photoprotective composition as defined by Claim 16, in which the number of moles of oxyalkylene units ranges from 1 to 30 mol.

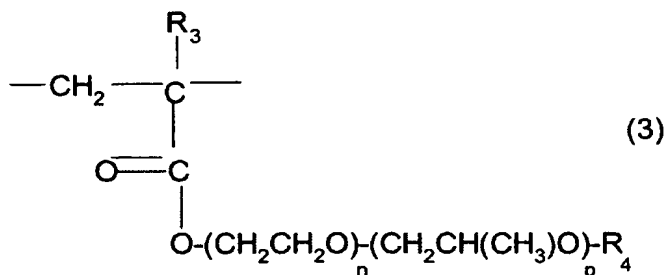
18. The photoprotective composition as defined by Claim 14, in which the amphiphilic AMPS polymers are amphiphilic copolymers of:

(a) 2-acrylamido-2-methylpropanesulfonic acid (AMPS) structural units of formula (2) below:



in which X<sup>+</sup> is a proton, an alkali metal cation, an alkaline earth metal cation or an ammonium ion; and

(b) structural units of formula (3) below:



in which  $\underline{n}$  and  $\underline{p}$ , independently of one another, denote a number of moles and range from 0 to 30, with the proviso that  $\underline{n} + \underline{p}$  is less than or equal to 30;  $R^3$  is a hydrogen atom or a linear or branched  $C_1$ - $C_6$  alkyl radical and  $R_4$  is a linear or branched alkyl radical comprising  $\underline{m}$  carbon atoms ranging from 7 to 22.

19. The photoprotective composition as defined by Claim 18, in which  $X^+$  is sodium or ammonium.

20. The photoprotective composition as defined by Claim 17, in which the structural unit of formula (3) is selected from among:

esters of (meth)acrylic acid and of a  $C_{10}$ - $C_{18}$  fatty alcohol polyoxyethylenated with 8 EO,

esters of (meth)acrylic acid and of a  $C_{11}$  fatty oxo alcohol polyoxyethylenated with 8 EO,

esters of (meth)acrylic acid and of a  $C_{12}$ - $C_{14}$  polyoxyethylenated fatty alcohol with 7 EO,

esters of (meth)acrylic acid and of a  $C_{12}$ - $C_{14}$  polyoxyethylenated fatty alcohol with 11 EO,

esters of (meth)acrylic acid and of a  $C_{16}$ - $C_{18}$  polyoxyethylenated fatty alcohol with 8 EO,

esters of (meth)acrylic acid and of a  $C_{16}$ - $C_{18}$  polyoxyethylenated fatty alcohol with 15 EO,

esters of (meth)acrylic acid and of a  $C_{16}$ - $C_{18}$  polyoxyethylenated fatty alcohol with 11 EO,

esters of (meth)acrylic acid and of a  $C_{16}$ - $C_{18}$  polyoxyethylenated fatty alcohol with 20 EO,

esters of (meth)acrylic acid and of a C<sub>16</sub>-C<sub>18</sub> polyoxyethylenated fatty alcohol with 25 EO, and

esters of (meth)acrylic acid and of a C<sub>18</sub>-C<sub>22</sub> polyoxyethylenated fatty alcohol with 25 EO and/or of a C<sub>16</sub>-C<sub>18</sub> polyoxyethylenated fatty isoalcohol with 25 EO.

21. The photoprotective composition as defined by Claim 18, in which the amphiphilic AMPS polymers are selected from among:

(i) non-crosslinked products for which  $p = 0$ ,  $\underline{n} = 7$  or 25, R<sub>3</sub> is methyl and R<sub>4</sub> is a C<sub>12</sub>-C<sub>14</sub> or C<sub>16</sub>-C<sub>18</sub> alkyl mixture,

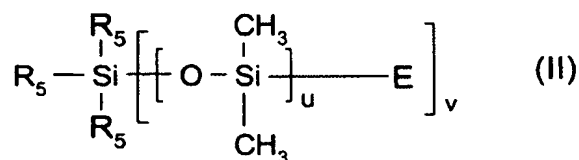
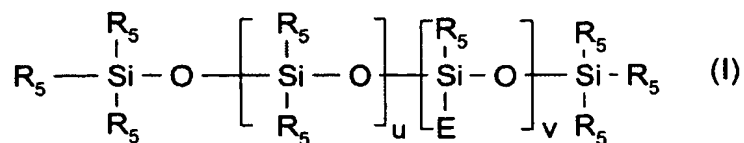
(ii) crosslinked products for which  $p = 0$ ,  $\underline{n} = 8$  or 25, R<sub>3</sub> is methyl and R<sub>4</sub> is a C<sub>16</sub>-C<sub>18</sub> alkyl mixture.

22. The photoprotective composition as defined by Claim 18, in which the molar proportion of structural units of formula (3) ranges from 0.1 % to 50 %.

23. The photoprotective composition as defined by Claim 18, in which the molar proportion of structural units of formula (3) ranges from 50.1 % to 99.9 %.

24. The photoprotective composition as defined by Claim 1, in which the AMPS polymers are present in active material amounts ranging from 0.01 % to 20 % by weight relative to the total weight of the composition.

25. The photoprotective composition as defined by Claim 1, said at least one water-soluble silicone comprising at least one terminal or pendent monovalent polyoxyalkylene group being selected from among the compounds of general formulae (I) and (II) below:



in which the radicals  $\text{R}_5$ , which may be identical or different, are each a monovalent hydrocarbon-based radical selected from among alkyl, aryl and aralkyl groups containing not more than 10 carbon atoms; a fraction of the radicals  $\text{R}_5$  optionally containing an ethylcyclohexylene monoxide group;

$u$  ranges from 10 to 150;

$v$  ranges from 3 to 12;

E is a group  $-\text{C}_x\text{H}_{2x}-(\text{OC}_2\text{H}_4)_y-(\text{OC}_3\text{H}_6)_z-\text{OR}_6$  in which  $x$  ranges from 1 to 8;  $y > 0$  and  $z \geq 0$ ;  $y$  and  $z$  being selected such that the total molecular weight of the radical E ranges from 200 to 10 000; and

$\text{R}_6$  is hydrogen, a linear or branched  $\text{C}_1$ - $\text{C}_8$  alkyl radical, a linear or branched  $\text{C}_2$ - $\text{C}_8$  acyl radical.

26. The photoprotective composition as defined by Claim 25, in which the radicals  $\text{R}_5$  are  $\text{C}_1$ - $\text{C}_4$  lower alkyl radical;  $\text{R}_6$  is hydrogen, a  $\text{C}_1$ - $\text{C}_4$  alkyl radical or a  $\text{C}_2$ - $\text{C}_4$  acyl radical;  $x$  ranges from 2 to 4 and  $y$  and  $z$  are selected such that the total molecular weight of the radical E ranges from 350 to 4,000.

27. The photoprotective composition as defined by Claim 26, in which all of the radicals  $\text{R}_5$  are methyl;  $\text{R}_6$  is hydrogen, methyl or acetyl; and  $x$  is 3.

28. The photoprotective composition as defined by Claim 1, in which the water-soluble silicone comprising at least one terminal or pendent monovalent polyoxyalkylene group is present in concentrations ranging from 0.01 % to 20 % by weight relative to the total weight of the composition.

29. The photoprotective composition as defined by Claim 1, further comprising at least one additional UV-A-active and/or UV-B-active organic or mineral screening agent, which is water-soluble, liposoluble or insoluble in the usual cosmetic solvents.

30. The photoprotective composition as defined by Claim 29, comprising at least one additional organic screening agent selected from among anthranilates; cinnamic derivatives; dibenzoylmethane derivatives; salicylic derivatives; camphor derivatives; triazine derivatives; benzophenone derivatives;  $\beta,\beta$ -diphenylacrylate derivatives; benzotriazole derivatives; benzalmalonate derivatives; benzimidazole derivatives; imidazolines; bisbenzazolyl derivatives; p-aminobenzoic acid (PABA) derivatives; benzoxazole derivatives; methylenebis(hydroxyphenylbenzotriazole) derivatives; screening polymers and screening silicones; dimers derived from  $\alpha$ -alkylstyrene; and 4,4-diarylbutadienes, and mixtures thereof.

31. The photoprotective composition as defined by Claim 30, comprising at least one additional organic screening agent selected from among:

Ethylhexyl salicylate,

Ethylhexyl methoxycinnamate,

Octocrylene,

Butyl methoxydibenzoylmethane,

Phenylbenzimidazolesulfonic acid,



Benzophenone-3,  
Benzophenone-4,  
Benzophenone-5,  
n-Hexyl 2-(4-diethylamino-2-hydroxybenzoyl)benzoate,  
4-Methylbenzylidenecamphor,  
Terephthalylidenedicamphorsulfonic acid,  
Disodium phenyldibenzimidazole tetrasulfonate,  
2,4,6-Tris(diisobutyl 4'-aminobenzalmalonate)-s-triazine,  
Anisotriazine,  
Ethylhexyltriazine,  
Diethylhexylbutamidotriazine,  
Methylenebis(benzotriazolyl)tetramethylbutylphenol,  
Drometrizole trisiloxane,  
Polysilicone-15  
1,1-Dicarboxy(2',2'-dimethylpropyl)-4,4-diphenylbutadiene,  
2,4-bis[5-1(Dimethylpropyl)benzoxazol-2-yl(4-phenyl)imino]-6-(2-ethylhexyl)imino-1,3,5-triazine,  
and mixtures thereof.

32. The photoprotective composition as defined by Claim 29, comprising at least one mineral screening agent selected from among coated or uncoated metal oxide pigments or nanopigments.

33. The photoprotective composition as defined by Claim 32, in which the additional mineral screening agents are nanopigments of titanium oxide, amorphous or crystallized in rutile and/or anatase form, or of iron oxide, zinc oxide, zirconium oxide or cerium oxide.

34. The photoprotective composition as defined by Claim 1, further comprising at least one agent for artificially tanning and/or browning the skin.

35. The photoprotective composition as defined by Claim 1, further comprising at least one cosmetic adjuvant selected from among organic solvents, ionic or nonionic thickeners, softeners, humectants, opacifiers, stabilizers, emollients, silicones, insect repellents, fragrances, preserving agents, surfactants, fillers, pigments, polymers, propellants, acidifying or basifying agents or any other ingredient commonly employed in cosmetics and/or dermatology.

36. The photoprotective composition as defined by Claim 1, formulated as a lotion or serum, an aqueous gel, an oil-in-water or water-in-oil emulsion; multiple emulsion, microemulsion, vesicular dispersion of ionic and/or nonionic type or wax/aqueous phase dispersion.

37. The photoprotective composition as defined by Claim 1, formulated as an oil-in-water or water-in-oil emulsion comprising not more than 1% by weight of emulsifying surfactant, relative to the total weight of the composition.

38. A method for photoprotecting the skin, lips and/or hair against the damaging effects of UV-radiation, comprising topically applying thereon a thus effective amount of a photoprotective composition comprising at least one aqueous phase and at least one system for screening out UV-radiation, further comprising:

(a) at least one partially or totally neutralized, crosslinked or non-crosslinked amphiphilic polymer of 2-acrylamidomethylpropanesulfonic acid (AMPS), and

(b) at least one water-soluble silicone comprising at least one terminal or pendent monovalent polyoxyalkylene group.